WHAT IS CLAIMED IS:

1. A process for producing a reaction bonded silicon carbide body, the process comprising:

combining a carbon source, silicon carbide, an organic gelation agent and a liquid to form a ceramic slurry;

compacting the ceramic slurry into a green body; and

exposing the green body to liquid silicon metal to produce a reaction bonded silicon carbide body.

2. A process as in claim 1, wherein the carbon source is selected from the group consisting of carbon black and colloidal graphite, and the silicon carbide comprises alpha silicon carbide grit.

3. A process as in claim 1, wherein the ceramic slurry includes about 0 wt% to about 20 wt% carbon black, about 0 wt% to about 15 wt% colloidal graphite, about 40 wt% to about 90 wt% alpha silicon carbide grit, about 0.01 wt% to about 15 wt% organic gelation agent and about 10 wt% to about 30 wt% liquid.

4. A process as in claim 1, wherein the organic gelation agent is selected from a group consisting of corn starch, potato starch, tapioca starch, wheat starch, methyl-cellulose, substituted derivatives of methyl-cellulose, carboxy-methyl-cellulose gum, guar gum, sodium alginate, gum arabic, lignosulfonates, polyacrylates, polyvinyl-butyrals and acrylics.

5. A process as in claim 1, wherein the ceramic slurry includes about 0.01 wt% to about 5 wt% potato starch as a gelation agent.

6. A process as in claim 1, further comprising heating the green body to a temperature of about 1400°C to about 1650°C during siliconization.

7. A process as in claim 1, wherein siliconization comprises exposing the green body to about 20 wt% to 150 wt% (based on green body weight) liquid silicon metal.

8. A process as in claim 1, wherein compacting the ceramic slurry comprises forcing the ceramic slurry into a porous mold with a pore size of about 2 microns

to about 20 microns and applying pressure of about 70 psig to about 600 psig for about 10 seconds to about 240 seconds.

9. A process as in claim 1, further comprising agitating the ceramic slurry continuously at low shear for about 4 hours to about 15 hours under vacuum conditions.

10. A process as in claim 1, wherein combining further comprises mixing the ceramic slurry for about 10 minutes to about 60 minutes using a high shear, high intensity mixer.

11. A process as in claim 1, further comprising drying the green body in a conveyor drying oven at about 30 °C to about 200 °C for about 5 minutes to about 12 minutes.

12. A process as in claim 1, wherein the silicon carbide body comprises an armor torso.

13. A reaction bonded silicon carbide body produced according to the process of claim 1.

14. A body as in claim 13, wherein the silicon carbide body comprises an armor torso.

15. A green body, comprising:
silicon carbide in a major amount;
a carbon source in a moderate amount;
an organic gelation agent in a minor amount;
and a liquid in a moderate amount.

16. A body as in claim 15, wherein the carbon source is selected from the group consisting of carbon black and colloidal graphite, and the silicon carbide comprises alpha silicon carbide grit.

17. A body as in claim 15, wherein the green body comprises about 5 wt% to about 17 wt% carbon black, about 3 wt% to about 11 wt% colloidal graphite, about 60 wt% to about 86 wt% alpha silicon carbide grit, about 0.01 wt% to about 17 wt% organic gelation agent and about 5 wt% to about 15 wt% liquid.

18. A body as in claim 15, wherein the organic gelation agent is selected from a group consisting of corn starch, potato starch, tapioca starch, wheat starch, methyl-cellulose, substituted derivatives of methyl-cellulose, carboxy-methyl-cellulose gum, guar gum, sodium alginate, gum arabic, lignosulfonates, polyacrylates, polyvinyl-butyrals and acrylics.

19. A body as in claim 18, wherein the green body comprises about 0.01 wt% to about 5 wt% potato starch as the organic gelation agent.

20. A ceramic slurry for producing a reaction bonded ceramic body, the ceramic slurry comprising:

silicon carbide in a major amount;

a carbon source in a moderate amount;

an organic gelation agent in a minor amount; and

a liquid in a moderate amount.

21. A ceramic slurry as in claim 20, wherein the carbon source is selected from the group consisting of carbon black and colloidal graphite, and the silicon carbide comprises alpha silicon carbide grit

22. A ceramic slurry as in claim 20, wherein the slurry includes about 0 wt% to about 20 wt% carbon black, about 0 wt% to about 15 wt% colloidal graphite, about 40 wt% to about 90 wt% alpha silicon carbide grit, about 0.01 wt% to about 15 wt% organic gelation agent and about 10 wt% to about 30 wt% liquid.

23. A ceramic slurry as in claim 20, wherein the organic gelation agent is selected from the group consisting of corn starch, potato starch, tapioca starch, wheat starch, methyl-cellulose, substituted derivatives of methyl-cellulose, carboxy-methyl-cellulose gum, guar gum, sodium alginate, gum arabic, lignosulfonates, polyacrylates, polyvinyl-butyrals and acrylics.

24. A ceramic slurry as in claim 23, wherein the ceramic slurry comprises about 0.01 wt% to about 5 wt% potato starch as the organic gelation agent.